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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,293	10/30/2003	Steven E. Carpenter	100110567-1	2555

22879 7590 03/11/2005

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INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

KOSSON, ROSANNE

ART UNIT	PAPER NUMBER
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1651

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

11

Office Action Summary

Application No.

10/699,293

Applicant(s)

CARPENTER ET AL.

Examiner

Rosanne Kosson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) 8-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/30/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicants' election with traverse of Group I, claims 1-7, in the reply filed on February 14, 2003 is acknowledged.

Claims 8-45 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventions, there being no allowable generic or linking claim.

Because Applicants did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Accordingly, claims 1-7 are examined on the merits herewith.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Boland et al. (US 2004/0237822). Boland discloses a method for printing a growth medium test

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sheet by ink-jet printing, in which an array of cell compositions (cell growth media containing viable cells) are deposited onto a substrate. The cell growth medium may be, e.g., MEM or Hank's Balanced Salts. Because cell growth medium contains a label that identifies growth, a pH indicator that is usually red at physiological pH, pink at a higher pH, and yellow at a lower pH, when the growth medium is printed on the test sheet, the label is also printed on the test sheet. The substrate may be glass, quartz, paper, plastic, gel or a membrane (see paragraphs 2, 5, 6, 33-35, 48, 49). More than one cell growth medium may deposited in a patterned array (see paragraphs 4 and 66). Thus, a holding of anticipation is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Ness et al. (US 6,248,521) in view of Warren et al. (US 2003/0100824) or in view of Boland et al. (US 2004/0237822). Van Ness discloses a method of producing a patterned array of different spots on a test sheet by ink-jet printing, in which the spots contain different DNA molecules in buffered salt solutions in nanoliter amounts. The test sheet may be made of silicon or glass (see col. 4, lines 46-59; and col. 6, lines 43-65). The DNA spots may be used for DNA synthesis or hybridization. Van Ness also discloses that replicate arrays of biological agents have long been used for parallel testing of many samples, but there is a need for high throughput screening methods, particularly in the area of screening nucleic acids. Costs can be significantly lowered if reaction volumes are decreased. An advantage of the method of Van Ness is that the array components need not be immobilized (see col. 1, lines 19-67). Van Ness, however, does not disclose an array of growth media.

Warren discloses a method of making a two-dimensional microarray, or a stack of two-dimensional microarrays, of more than one type of component by printing (fine-pattern microdispensing) one or more growth media. The growth media may be nutrients or growth factors. Cells may be dispersed in the growth medium (see paragraphs 4, 6, 10-14, 221-223, 226, 232 and 277). One of ordinary skill in the art would have been motivated to have used one or more growth media in the ink-jet printing method of Van Ness to produce a test sheet containing spots of the media

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because the skilled artisan would have recognized that the method of Van Ness is effective for printing a sheet of growth medium spots to test the growth of cells. Warren discloses that its reagents, dispensed in microvolumes in a controlled pattern, are suited for culturing cells and for testing the growth of cells in a microarray. Therefore, a holding of obviousness is required.

The teachings of Boland are discussed above. One of ordinary skill in the art would have been motivated to have used one or more growth media in the ink-jet printing method of Van Ness to produce a test sheet containing spots of the media because the skilled artisan would have recognized that the method of Van Ness, as well as the method of Boland, are effective for printing a sheet of growth medium spots to test the growth of cells. Boland discloses that its reagents are suited to use in preparing microarray test sheets. Van Ness also discloses that its method is suitable for screening nucleic acid molecules. One of ordinary skill in the art would have recognized that cells would have been grown on a sheet prepared by the method of Van Ness and nucleic acid molecules harvested from these cells for screening, because a large number of cell and nucleic acid samples would have been produced by this method. Further, Van Ness discloses that producing a test sheet is cheaper when nanovolumes are used and that the method of Van Ness is suitable for depositing solutions that are not immobilized and solutions in which biological reactions occur. Accordingly, a holding of obviousness is required.

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No claim is allowed.

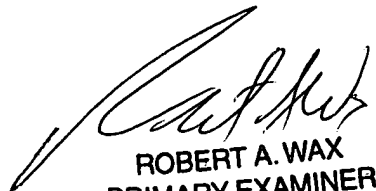
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosanne Kosson whose telephone number is 571-272-2923. The examiner can normally be reached on Monday-Friday, 8:30-6:00, with alternate Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rosanne Kosson
Examiner
Art Unit 1651

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2005-03-03


ROBERT A. WAX
PRIMARY EXAMINER
Art Unit 1653